

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An optical sensor characterized by comprising a photoconductive material layer, which generates a carrier inside when irradiated with a light or an electromagnetic wave, and a transparent or translucent insulating layer formed on said photoconductive material layer,

and a carbon nanotube formed on said insulating layer, and electrodes connected to opposite ends of said carbon nanotube, wherein;

said photoconductive material layer is irradiated with said light or electromagnetic wave through said transparent or translucent insulating layer;

a predetermined voltage is applied between said two electrodes, and

by sensing said carrier, which is generated within said photoconductive material layer by irradiation of said light or electromagnetic wave, is sensed through change of electrical conduction of said carbon nanotube.

2. (Currently Amended) An optical sensor according to Claim 1, characterized in that said photoconductive material layer comprises by comprising a single layer structure or a multilayer structure serving as said photoconductive material, where said single layer structure or said multilayer

structure is made of a plurality of kinds of photoconductive materials having photoconductivity in different wavelength ranges.

3. (Currently Amended) An optical sensor according to Claim 2, characterized in that said multilayer structure includes layers of a photoconductive material having a wider energy gap at the side being irradiated ~~with a light or an electromagnetic wave of said transparent or translucent insulating layer.~~

4. (Canceled).

5. (Previously Presented) An optical sensor according to Claim 1, characterized in that said optical sensor has a field effect transistor structure or a single electron transistor structure.

6. (Currently Amended) An optical sensor according to Claim 5, characterized in that said field effect transistor structure is a structure in which a gate electrode is provided under said photoconductive material layer.

7. (Currently Amended) An optical sensor according to Claim 5, characterized in that said field effect transistor structure is a structure in which

a gate electrode is provided above said carbon nanotube through said transparent or translucent insulating layer.

8. (Currently Amended) An optical sensor according to Claim 5, characterized in that said field effect transistor structure is a structure in which a gate electrode is provided near said carbon nanotube formed on said transparent or translucent insulating layer.

9. (Currently Amended) An optical sensor according to Claim 1, characterized in that said electrodes connected to opposite ends of said carbon nanotube are provided, and said two electrodes have a comb-like shape and are disposed on said transparent or translucent insulating layer to be opposed to each other, while a large number of carbon nanotubes including said carbon nanotube are connected in parallel between said two electrodes.

10. (Previously Presented) An optical sensor according to Claim 1, characterized in that a condenser is disposed on a side where said optical sensor is irradiated with said light or electromagnetic wave.

Claims 11-12 (Canceled).

13. (Previously Presented) An optical sensor according to Claim 2, characterized in that said optical sensor has a field effect transistor structure or a single electron transistor structure.

14. (Previously Presented) An optical sensor according to Claim 3, characterized in that said optical sensor has a field effect transistor structure or a single electron transistor structure.

Claim 15 (Canceled).

16. (Currently Amended) An optical sensor according to Claim 2, characterized in that said electrodes connected to opposite ends of said carbon nanotube are provided, and said two electrodes have a comb-like shape and are disposed on said transparent or translucent insulating layer to be opposed to each other, while a large number of carbon nanotubes including said carbon nanotube are connected in parallel between said two electrodes.

17. (Currently Amended) An optical sensor according to Claim 3, characterized in that said electrodes connected to opposite ends of said carbon nanotube are provided, and said two electrodes have a comb-like shape and are disposed on said transparent or translucent insulating layer to be opposed to

each other, while a large number of carbon nanotubes including said carbon nanotube are connected in parallel between said two electrodes.

Claim 18 (Canceled).

19. (Currently Amended) An optical sensor according to Claim 5, characterized in that ~~said electrodes connected to opposite ends of said carbon nanotube are provided, and said two electrodes~~ have a comb-like shape and are disposed on said transparent or translucent insulating layer to be opposed to each other, while a large number of carbon nanotubes including said carbon nanotube are connected in parallel between said two electrodes.

20. (Previously Presented) An optical sensor according to Claim 2, characterized in that a condenser is disposed on a side where said optical sensor is irradiated with said light or electromagnetic wave.